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HIGH-SPEED CUTTING ON MULTISPINDLE AUTOMATICS

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In the bearing industry, the most prevalent models of large-size automatics (1261, 126, 4/64) operate satisfactorily under conditions of high-speed cutting. Adjustment of the machine remains stable; breakage or rapid wear of mechanisms or parts of the machine tool are not apparent. The 1261 automatic, having been in operation for 8 months under high-speed cutting conditions, was found to be in good working order and maintained the required accuracy of parts.

High-speed methods of cutting increase productivity 40-50 percent and more..

When working with hard-alloy tools on multi-spindle automatics, to assure maximum productivity of the automatic, durability of the tool, and quiet operation of the equipment the following conditions of cutting are recommended: speed of cutting on the maximum diameter being machined, 48-55 meters per minute; longitudinal feed, 0.18-0.2 millimeters per revolution.

Cutting-off tools made of T5K10 alloy under these conditions of cutting will last 3-3½ hours and tools made of VK8 alloy will last 8-10 hours.

Sulfofrezol, a coolant, must be fed to each tool in an abundant flow at the rate of 8-10 liters per minute. An insufficient flow can bring about rapid evaporation, and when cutting at speeds higher than 70 meters per minute can set the sulfofrezol on fire.

Four-blade disk-forming cutters for machining external surfaces and two-blade grooving cutters for machining internal surfaces have proved sufficiently reliable in high speed operations.

For increasing rigidity, reamers with four blades, the working parts of which are shortened to 40-80 millimeters, are recommended. The shorter reamers break the holes less frequently and the consumption of metal for their manufacture is decreased. In the manufacture of races from tubes, boring tools installed in a cylindrical mandrel can be used instead of reamers.

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